



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------------------|-----------------------------|
| 10/690,194 | 10/21/2003 | Amy E. Battles | 200206304-1 | 3661 |
| 22879 7590 12/07/2007 HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400 | | | EXAMINER TRAN, NHAN T | |
| | | | ART UNIT 2622 | PAPER NUMBER |
| | | | NOTIFICATION DATE 12/07/2007 | DELIVERY MODE ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JERRY.SHORMA@HP.COM
mkraft@hp.com
ipa.mail@hp.com

Office Action Summary

Application No.

10/690,194

Applicant(s)

BATTLES ET AL.

Examiner

Nhan T. Tran

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 9/25/2007 with respect to claims 20 & 21 rejected under 35 USC 101 have been fully considered and are persuasive. The rejection of these claims has been withdrawn.
2. Applicant's arguments filed 9/25/2007 with respect to claims 1-3, 5-22 rejected under 35 USC 102 and 103 have been fully considered but they are not persuasive.

The Applicant argues that Berstis fails to teach or suggest "a display configured to display each frame using the orientation information, such that the displayed frame is oriented the same as an orientation of the image capture system when the frame was captured." as recited in claim 1.

In response, the Examiner understands the Applicant's arguments but respectfully disagrees. It is clearly seen in Berstis that the orientation of each video frame is recorded as shown in step 78 of Fig. 4 and this orientation of each video frame is used to reproduce the correct orientation of the video frame when the frame is reproduced for the virtual reality as the user entering the virtual building at point A shown in Figs. 5 & 7. Berstis discloses in col. 6, lines 2-12 and col. 7, line 66 - col. 8, line 40 that the system comprises a display (18 in Fig. 1) for displaying each frame in the same orientation as it was captured to create a virtual 3-D video along the paths A, B, C, D and so on.

For the independent claims 5, 11, 17, 20, 21, the Applicant argues for the similar feature as recited in claim 1. These claims are also met by the analysis of claim 1. It is noted that the Applicant does not argue for claim 22.

In view of the above, the Applicant's claimed invention is written broad enough to read on the teaching of Berstis, and thus the rejection is maintained.

Specification

3. The amendments to the specification filed 9/25/2007 are accepted.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 22 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 22 merely lists data structure of a video clip representing descriptive material *per se* and is not directed to a practical application. The claim does not require any physical transformation and the invention as claimed does not produce a concrete, useful and tangible result, and hence non-statutory.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 5-6, 8-12, 14-18, 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Berstis (US 6,337,688).

Regarding claim 1, Berstis discloses a video system (Figs. 1 & 2) comprising:
an image capture system (video camera 12) configured to capture a plurality of frames of a video clip (col. 3, lines 1-10 and col. 5, lines 45-63);
a sequence data generating system (Figs. 2 & 4) for generating data indicative of frame position of each of the plurality of frames (see col. 3, lines 42-63 and col. 5, lines 48-63, wherein frame position of each of the video frames is indicated by the position of the camera sensed by the position and orientation sensor 34, or the frame position reads on the frame number);
an orientation sensor (34) configured to provide orientation information for each of the plurality of frames at the time each frame is captured (Figs. 2 & 4; col. 3, lines 49-63);
a processor (30) configured to incorporate the orientation information and sequence data into each frame (Figs. 2 & 4; col. 5, lines 48-53), a display (18 in Fig. 1) configured to display each frame using the orientation information, such that the displayed frame is oriented the same as an orientation of the image capture system

when the frame was captured (see Figs. 5 & 7; col. 6, lines 2-12 and col. 7, line 66 – col. 8, line 40, and note that each frame is displayed in the same orientation as it was captured to create a virtual 3-D video along the paths A, B, C, D and so on. Please see the Examiner's response section 2 above).

Regarding claim 5, this method claim is also met by the analysis of apparatus claim 1.

Regarding claim 6, it is also clear in Berstis that the steps of claim 6 are repeated to capture a plurality of serially sequenced frames corresponding to the video clip (see col. 5, line 45 – col. 6, line 12).

Regarding claim 8, Berstis further discloses that the step of incorporating the orientation information comprises incorporating the orientation information into the frame as a file (col. 5, lines 48-60).

Regarding claim 9, Berstis further discloses that the step of incorporating the orientation information comprises incorporating the orientation information into the image data (col. 5, lines 53-57).

Regarding claim 10, as clearly disclosed in Figs. 2 & 4 and col. 5, lines 48-53, a step of saving the frame into a memory (32) comprising a plurality of serially sequenced frames corresponding to the video clip.

Regarding claim 11, Berstis discloses a method for displaying a frame of a video clip (Fig. 8), the method comprising the steps of:

- receiving the frame having at least image data and sequence data corresponding to an image captured by an image capture device (col. 7, line 66 – col. 8, line 40);

- receiving orientation information residing in the frame; determining an orientation of the frame, the orientation of the frame corresponding to the orientation of the image capture device at the time the image was captured; and displaying the frame oriented in accordance with the determined orientation (col. 7, line 66 – col. 8, line 40, wherein the captured frames are displayed in the same orientation as they were captured when the user inputs a command to view virtual 3-D video from point A to point L of the interior of a building as illustrated in Fig. 5).

Regarding claim 12, as the user selects point B shown in Fig. 5, a frame from a plurality of serially sequenced frames corresponding to the video clip at point B is selected for displaying (col. 8, lines 30-40).

Regarding claim 14, it is clearly seen in col. 7, line 66 – col. 8, line 40 that the frame is retrieved from a memory (32) to generate the virtual 3-D video.

Regarding claim 15, Berstis further discloses the steps of: communicating the frame from an image capture device (video camera 12) to a processing device (computer 6 shown in Fig. 1); and displaying the frame on a display (18) coupled to the processing device (col. 2, lines 50-67).

Regarding claim 16, see the analysis of claim 15 in which display 18 is coupled to the camera via communication line 8 (Fig. 1). Furthermore, the frame can be displayed (not necessarily to be displayed in the same orientation as it was captured) on the LCD attached to the camera (col. 4, lines 1-5).

Regarding claim 17, Berstis discloses a system for providing orientation information for frames of a video clip (Fig. 1), comprising:

- means (optical input/image sensor 42) for capturing an image (Fig. 2; col. 3, lines 1-10);

- means (combined 42 and 30) for generating a frame having at least image data corresponding to the captured image and sequence data (i.e., frame number), wherein the frame is one of a plurality of serially sequenced frames corresponding to the video clip (Figs. 2 & 4 and col. 5, lines 45-63);

- means (34) for sensing an orientation of an image capture device at the time the image is captured (col. 3, lines 49-63);

- means (30) for incorporating the orientation into the frame (col. 5, lines 45-63);

means (32) for storing the frame with the orientation in a memory (col. 5, lines 45-57);

means (18) for displaying the frame oriented in accordance with the sensed orientation (col. 6, lines 2-12 and col. 7, line 66 – col. 8, line 40, wherein the frame is displayed in the same orientation as it was captured when it is reproduced to create a virtual reality as discussed in the Examiner's response in section 2 above).

Regarding claim 18, also disclosed by Berstis is a means for generating orientation information from the orientation of the image capture device such that the orientation information is incorporated into the frame (col. 5, lines 45-57).

Regarding claims 20 & 21, these program claims are also met by the analyses of method claims 11, 14, 5 and 6 realized by a program stored in a computer-readable medium (i.e., CD-ROM, hard disk, etc.). See col. 9, lines 54-60.

Regarding claim 22, Berstis discloses a video clip (col. 3, lines 1-10) comprising:
a first frame comprising image data, video sequence data (i.e., frame number) and image orientation data (col. 5, lines 45-63); and a second frame (another frame in the video sequence) comprising second image data, second video sequence data (i.e., a subsequent frame number) and second image orientation data (col. 5, lines 45-63), the second frame serially sequenced immediately behind the first frame (this is inherent

as sequence of video frames captured by the video camera 12 in time sequence as disclosed in col. 3, lines 1-10).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 3, 7, 13 & 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berstis (US 6,337,688) in view of Parulski et al. (US 5,900,909).

Regarding claim 2, although Berstis teaches that the orientation information is incorporated with each image frame (col. 5, lines 48-57), Berstis is silent about that the orientation information resides in a frame header of each frame. However, as taught by Parulski, it is well known in the art that the orientation code of an image is stored in the frame header of an image so that the image orientation is quickly detected during playback for rotating the displayed image to the same orientation as it was captured (see Parulski, Fig. 6 and col. 5, lines 40-56).

Therefore, it would have been obvious to one of ordinary skill in the art to configure the video system of Berstis to store the orientation information in a frame header of each frame so that the orientation information would be quickly retrieved during playback.

Regarding claim 3, it is also seen in the combined teaching of Berstis and Parulski that a memory is configured to receive each frame wherein the orientation information resides (see Berstis, col. 5, lines 48-57 and the analysis of claim 2).

Regarding claims 7, 13 & 19, these claims are also met by the analyses of claims 2 & 3 above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Tran whose telephone number is (571) 272-7371. The examiner can normally be reached on Monday - Friday, 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/690,194
Art Unit: 2622

Page 11

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



NHAN T. TRAN
Patent Examiner